

MAERS

What is it?

What is the data used for?



**AQD 101 Webinar Series
December 16, 2015**



Who will you hear from?

Steve Lachance,
Environmental Quality
Specialist



Renee Denison,
MAERS Coordinator



Jenifer Dixon,
Air Quality Specialist



Webinar Set Up

- All lines will be muted
- Questions can be sent to us via the question/chat box
- We will record webinar and post online



Our Year of Clean Air!



- **Celebrating** our progress
- **Engaging** the present
- **Planning** for the future

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MAERS - *What is it?*

Michigan Air Emissions Reporting System

- Authorized by “Rule 2” located at http://w3.lara.state.mi.us/orr/Files/AdminCode/470_10445_AdminCode.pdf
- A central concept of management is to know what you have
- Where have we been? Where are we going?
Where do we want to be?

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Rule 2. The department shall require an annual report from a commercial, industrial, or governmental source of emission of an air contaminant if, in the judgment of the department, information on the quantity and composition of an air contaminant emitted from the source is considered by the department as necessary for the proper management of the air resources. The information shall be specified by the department and shall be submitted on forms available from the department. The information shall include factors deemed necessary by the department to reasonably estimate quantities of air contaminant discharges and their significance. The report shall be submitted to the department not later than March 15 of each year following notification by the department that the report is required. The notification shall be in writing and shall be mailed to the owner or operator of the source of emission not less than 45 days before the deadline for submitting the report.

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DEQ Policy and Procedure AQD-013

“Criteria Pollutant Threshold Levels for the
Point Source Emissions Inventory”

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DEQ Policy and Procedure AQD-013

“Criteria Pollutant Threshold Levels for the Point Source Emissions Inventory”

As a matter of course, this includes:

- Threshold Sources
- Major Sources
- “Opt-out” Sources
- Category I and II Fee-subject Sources
- Sources of timely interest
- Sources with emissions “considered by the department as necessary for the proper management of the air resources”

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MAERS Life-line

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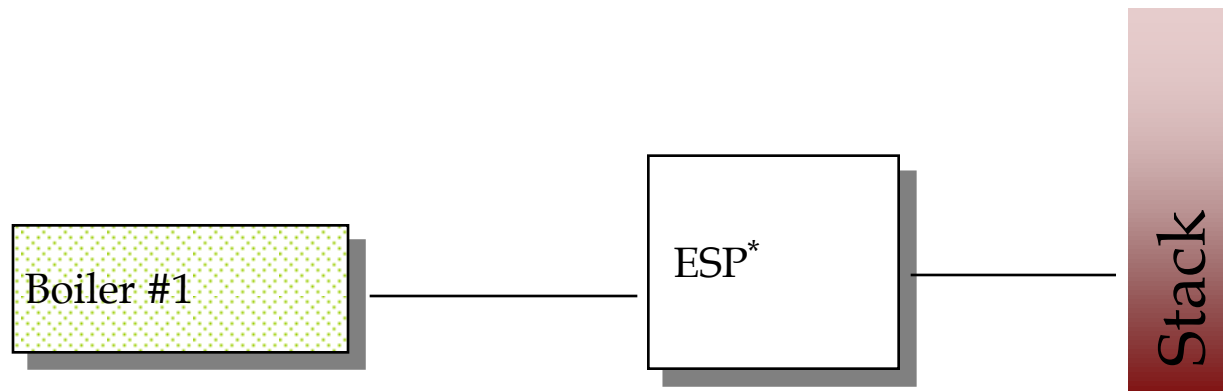
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Emission Unit

A collection of one or more process devices, zero or more control devices and related stacks.



* Electrostatic Precipitator

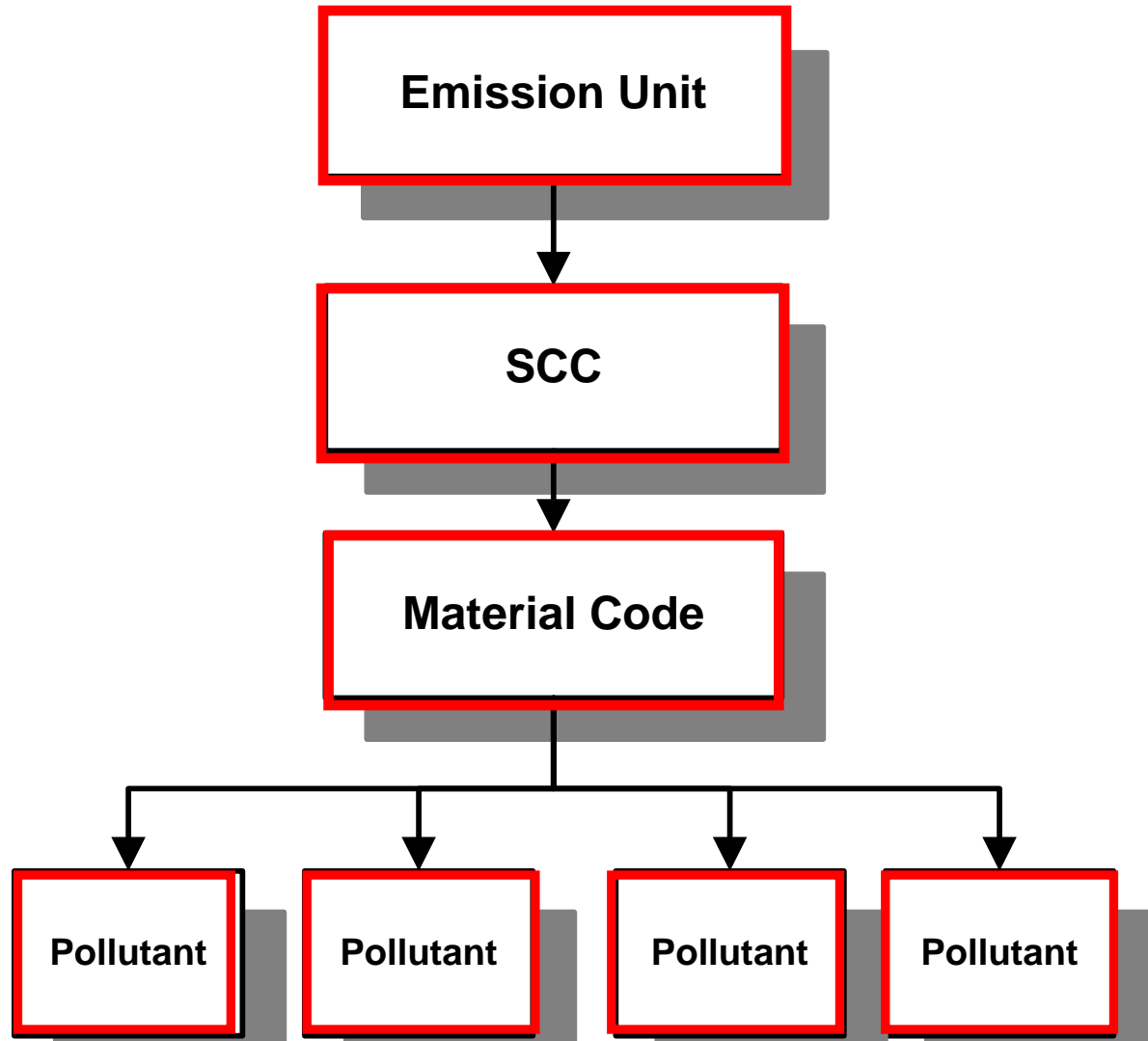
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DEQ Policy and Procedure AQD-006

“Procedure for Determining Emission Units”



MAERS Form Relationships



What Pollutants Need to be Reported?

- Ammonia
- CO
- Lead
- NOx
- SOx
- PM
- VOCs

How Does MAERS Work?

Material Throughput/Unit Code



Emission Factor (pollutant specific)



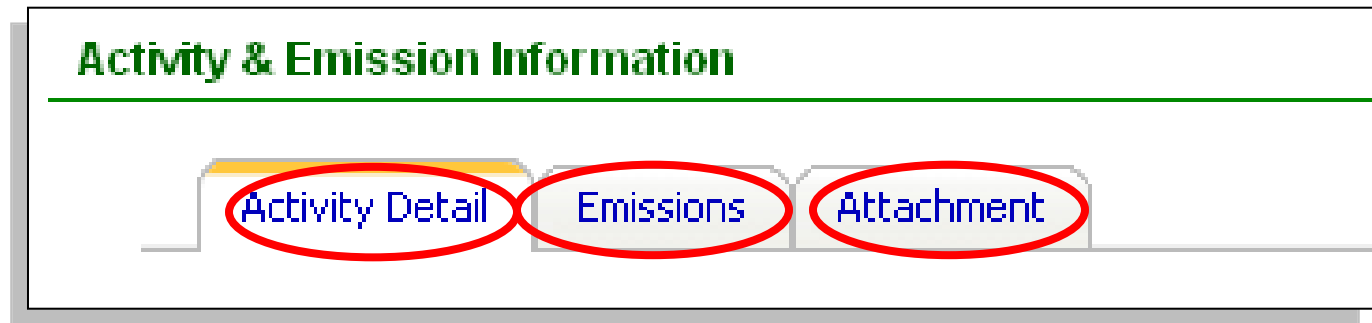
Control Efficiency (pollutant specific)



Emissions (pollutant specific)

Activity and Emission Form

- Activity Detail
- Emission Information



The screenshot shows a web interface for the "Activity & Emission Information" form. The title is in green text at the top. Below the title, there are three tabs: "Activity Detail", "Emissions", and "Attachment". The "Activity Detail" tab is highlighted with a yellow bar and is circled in red. The "Emissions" and "Attachment" tabs are also circled in red.

Activity & Emission Information

Activity Detail Emissions Attachment

How Does MAERS Work?

Simple Example

How many lbs of NO_x are emitted from natural gas combustion in a small boiler?

$$100 \text{ mmcf} \times (100 \text{ lbs NO}_x/\text{mmcf}) \times (1 - 0.50) =$$

5,000 lbs NO_x

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Are you feeling Overwhelmed?

Let's minimize that with an **efficient, web-based electronic reporting system** that:

- Is available 24-7;
- Uses internal quality control checks;
- Carries data over from previous reports;
- Contains built-in emission factors;
- Allows for flexible reporting methods;
- Calculates emissions;
- Generates various reports; *and*
- Utilizes multiple, redundant support systems.

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Upcoming MAERS Training Opportunities and Resources:

- InfoMAERS@michigan.gov
- Webinar!
 - ✓ January 14, 2016
- Roadshow!
 - ✓ 4 cities, 1/21 – 2/11/16
- Web Page!
 - ✓ <http://www.michigan.gov/deq/0,1607,7-135-3310---,00.html>
 - ✓ (DEQ>Air>Emissions)
- Tutorials!
 - ✓ http://www.michigan.gov/deq/0,4561,7-135-3310_70310_4103-229444--,00.html
 - ✓ (DEQ>Air>Emissions>MAERS>Online Tutorials)



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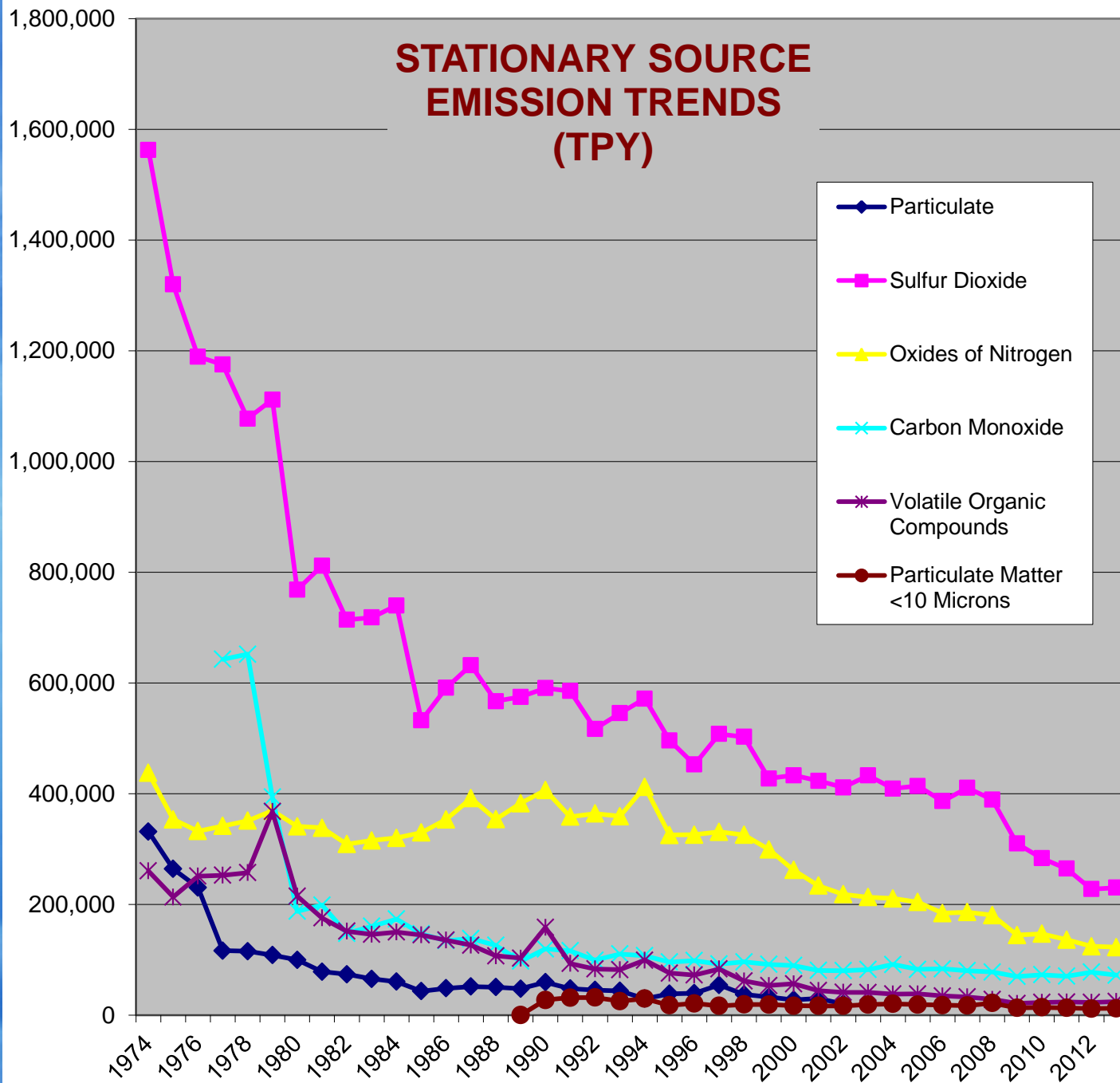
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What is MAERS data used for?

- Overall State Inventory
 - ✓ Identify Program Needs
 - ✓ Assess Program Effectiveness
 - ✓ Modeling
- Overall National Inventory
 - ✓ Including Toxics
 - ✓ Rule Development
 - ✓ Public Information
- Permitting
 - ✓ Source Categorizations
 - ✓ Emission Unit actual emissions and operating specifics
 - ✓ Operating Permit Renewals
- Field Evaluations
- Fees

STATIONARY SOURCE EMISSION TRENDS (TPY)

Tons Per Year (TPY)



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Air Emissions Reporting
Requirements (AERR); December
2008 (amended February 2015)
National Emissions Inventory
(NEI) NATA; MACT Development;
etc.



§105 Federal Grant Commitments
(include HAPs)
CAA Title V Fees (Facility /
Emissions Fee)

Strategic Planning
SIP; Attainment Demo; etc.
Permit Modeling Demonstrations



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Emission Inventories Inform:

- State Implementation Plan submittals:
 - ✓ SO₂ nonattainment studies
 - ✓ Lead nonattainment / attainment plans
 - ✓ Regional Haze updates
- Photochemical modeling efforts
 - ✓ Past and Future Ozone attainment demonstrations
 - ✓ Future year EI projections (“modeling inventories”)
- Federal Regulation Development
- National Air Toxics Assessment

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Use of MAERS in **Permitting**

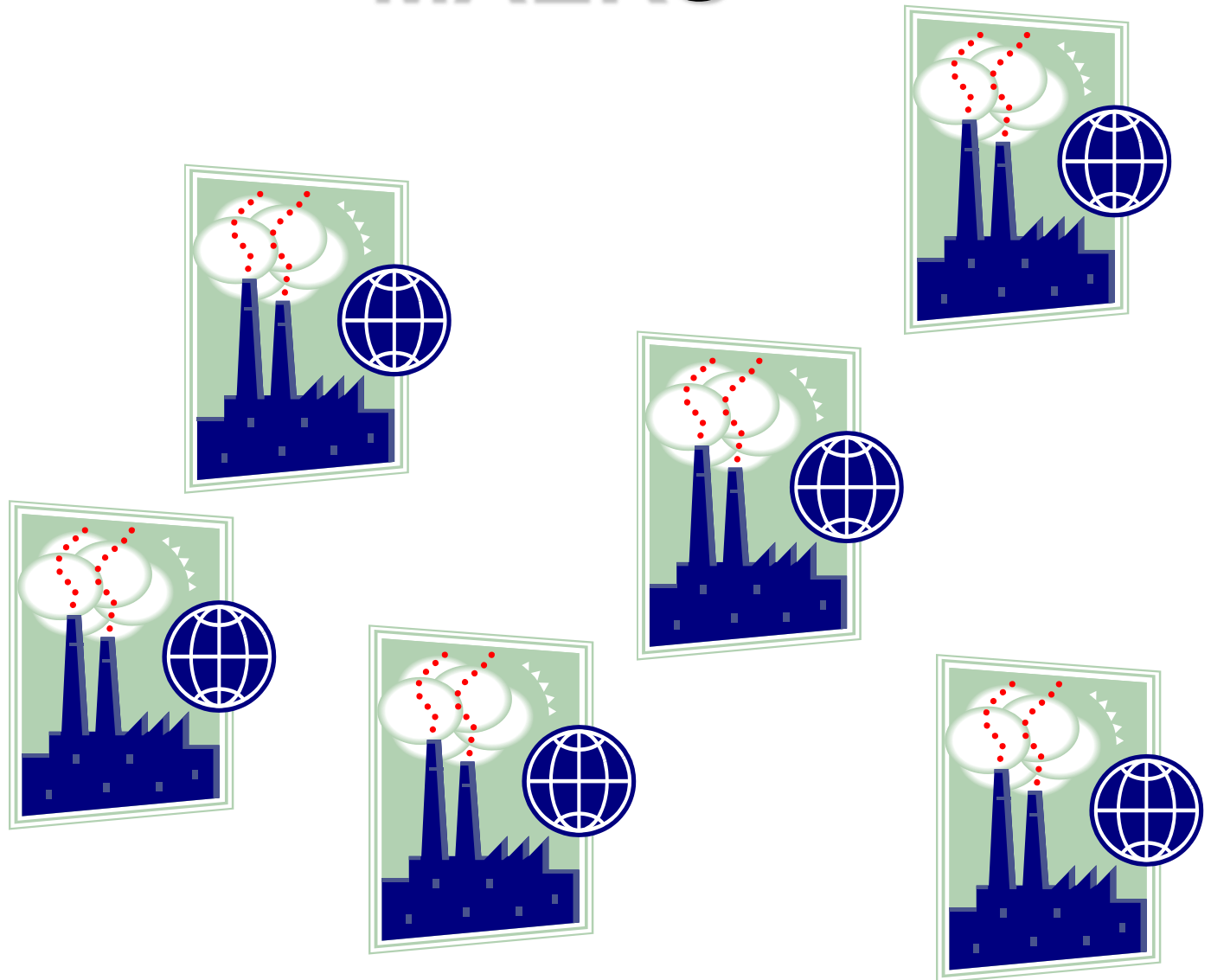
Facility Contacts (Internal and External)
Facility Status and Categorization

- Title V
- HAPs
- PSD

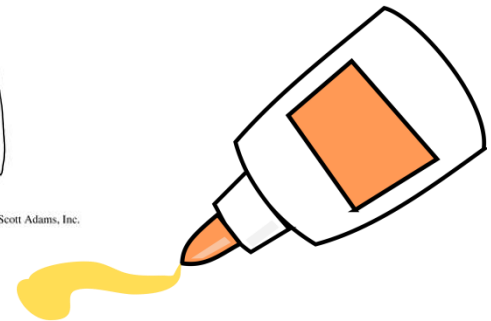
Actual Emissions per EU

- PSD Analyses
- Operational Specifics; Controls, Fuels, “Activities”

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MAERS in the Field



MAERS and Fees

Fee =



Static

Source Category Charge +

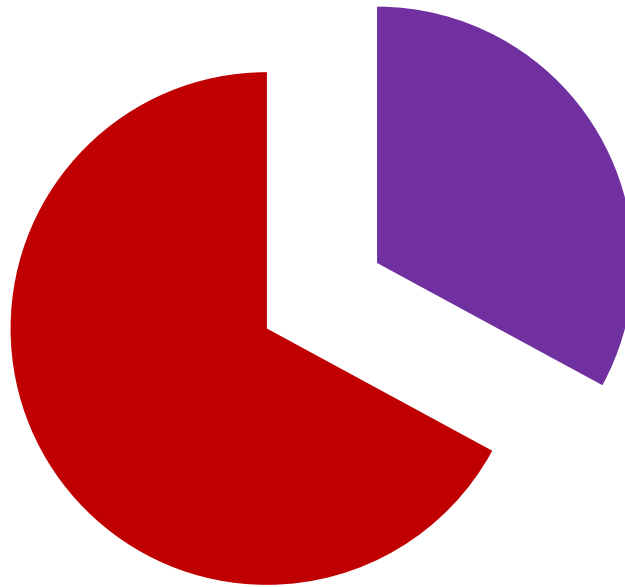


Dynamic!

Billable Emissions Charge

Fee Contribution to AQD Budget

- 33% of AQD's 2015 appropriation



■ FY15 Air Quality Fee Appropriation = \$8,587,400.00

■ Remainder of FY15 AQD Appropriation (Total = \$26,093,200)

MAERS and Fees

Support Title V Activities

- Renewable Operating Permits
- Compliance and Inspections
- Emissions Inventory Activities
(ERAU; *partial*)
- Small Business Clean Air
Assistance

Emissions Info on the Web

DEQ AQD Emissions

<http://www.michigan.gov/deq/0,1607,7-135-3310---,00.html>

National Emissions Inventory

<http://www3.epa.gov/ttn/chief/eiinformation.html>

National Air Toxics Assessments

<http://www3.epa.gov/ttn/atw/natamain>

Completeness Check

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MAERS Report Data Entry

 Source

 Contact


 Stack




Passed Completeness Check. Your data is ready to be submitted.


 Reporting Step

 Activity & Emission

 Submit

 MAERS Report Site Map

 Audit Documentation Tabs

 Completeness Check

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Form Type: Emission Unit +

Emission Unit Info

Emission Factor

Emission Unit Identification

★ Emission Unit ID:

EU001

AQD Emission Unit ID:

EU0001

★ Emission Unit Type:

Boiler



Capacity Information

★ Is this a combustion source?

Yes



★ Design Capacity:

100

★ Design Capacity Unit Numerator:

MMBTU

★ Design Capacity Unit Denominator:

HR

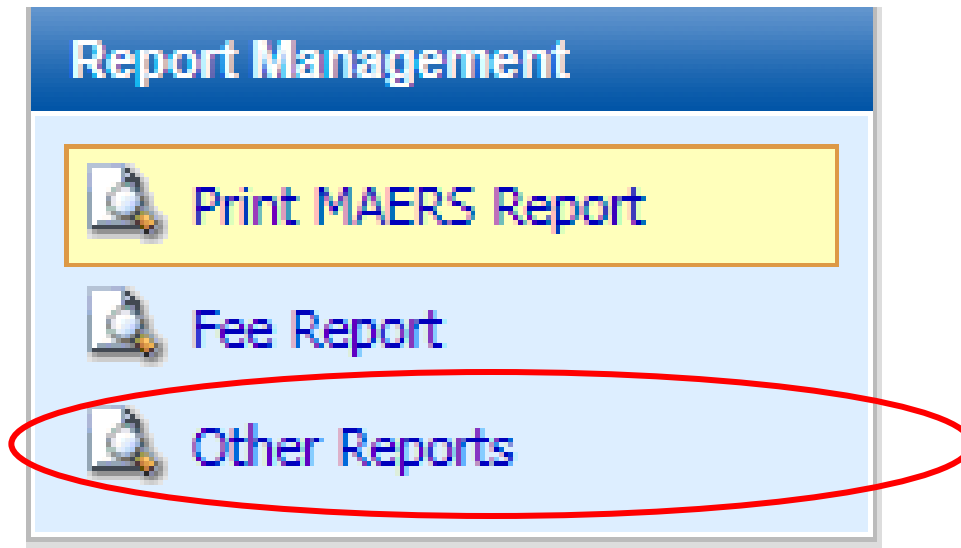
★ Is this combustion source used to generate electricity?

No













Reports

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View	Name
	Additions Report
	Removed Report
	Emission Comparison – Source Totals Report
	Emission Comparison – Emission Unit Totals Report
	Emission Comparison – SOC Detail Report
	Material Unit Comparison Report
	Completeness Check Report
	Threshold Comparison Report
	Fuel Consumption Rank Report
	Emission Comparison – Previous Year Report
1 2	

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Red Text - Indicates Criteria Pollutants

SOURCE REPORTED EMISSIONS			AQD CALCULATED EMISSIONS		
Pollutant	Amount	Unit	Pollutant	Amount	Unit
AMMONIA	227.89	LB	AMMONIA	227.89	LB
CO	60899.22	LB	CO	60899.22	LB
LEAD	29.90	LB	LEAD	29.90	LB
NOX	555854.10	LB	NOX	1367384.60	LB
PM10,FLTRBLE	52894.41	LB	PM10,FLTRBLE	52793.79	LB
PM10,PRIMARY	389.35	LB	PM10,PRIMARY	389.35	LB
PM2.5,FLTRBL	13819.47	LB	PM2.5,FLTRBL	13718.85	LB
PM2.5,PRIMRY	389.35	LB	PM2.5,PRIMRY	389.35	LB
SO2	331778.64	LB	SO2	12774857.29	LB
TNMOC	6791.51	LB	TNMOC	6791.51	LB
VOC	788.17	LB	VOC	788.17	LB
ACENAPHTHEN		LB	ACENAPHTHEN	0.06	LB
ACENAPHTHYL		LB	ACENAPHTHYL	0.03	LB
ACETALDEHYDE		LB	ACETALDEHYDE	64.52	LB

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My Auditing










- 🔍 Sources Assign to Me for Audit: 32
- 🔍 Sources - Completed: 32
- 🔍 Sources - Incomplete: 0



My Masterlist (Master List)

- 🔍 Sources Assigned to me on Master List: 28

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View/Audit		Pre Audit Score	MF Report Status
		84	Estimated
		210	Estimated
		511	Estimated
		2	Estimated
		20	Review Complete
		0	Review Complete

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Pre-Audit Result

MAERS Report Site Map

Audit Detail

Pre-Audit Result Detail Message

- Previous Year Comparison report > 20% (for <1 ton mass difference) (EU:1
- Previous Year Comparison report > 20% (for 1 to <4 ton mass difference) (EU:1
- Previous Year Comparison report > 20% (for <1 ton mass difference) (EU:1
- Previous Year Comparison report > 20% (for <1 ton mass difference) (EU:1
- Previous Year Comparison report (for >40 ton mass difference) (EU:1
- Previous Year Comparison report > 20% (for <1 ton mass difference) (EU:1
- Previous Year Comparison report > 20% (for <1 ton mass difference) (EU:1
- Previous Year Comparison report (for >40 ton mass difference) (EU:1
- Previous Year Comparison report > 20% (for <1 ton mass difference) (EU:1

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Questions? Discussion?

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What's Coming Up?

Air Dispersion Modeling: What the heck is it?

January 20, 2016 at 10:00AM

Stack Testing: What is it and why is it necessary?

February 24, 2016 at 10:00AM

Air Monitoring: History and Rationale

March 16, 2016 at 10:00AM

Please join us!

Wrap Up



- Recording
- Materials
- Evaluation

Michigan Department of Environmental Quality

800-662-9278

www.michigan.gov/deq



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